REMARKS / ARGUMENTS

Priority

Applicants request acknowledgment of the claim for priority in this case. The priority document was filed in the International Phase of this application and is referred to in the Official Filing Receipt mailed October 26, 2001.

35 U.S.C. 112

Claims 14 and 16-19 stand rejected under 35 U.S.C. §112 as being indefinite for the reasons set forth in numbered paragraph 3 on page 2 of the Action. Claim 14 has been substantially amended in a manner in which it is believed overcomes all of the objections to that claim set forth by the Examiner.

Claim 16 has also been amended to not only delete CO but also to clarify the last two lines of the claim.

In view of the amendments to claims 14 and 16, it is not believed that any amendments are necessary to claim 17.

35 U.S.C. §103

Claims 14 and 16-19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over JP 08-238418 in view of EP 885,648 and JP 61-003040. Claims 14 and 16-20 also stand rejected under 35 U.S.C. §103(a) as being unpatentable

over EP 885,648 in view of JP 08 238418 and JP 61-003040. These rejections are traversed as follows.

Patentability of the Claims

Claim 14 has been amended to further recite that the harmful compound removing catalyst has a reaction temperature of 650-850°C. It is noted that this feature was described in original claim 10 of the application. In addition the behaviors of a fluorine compound decomposition catalyst and a harmful compound removing catalyst in the reactions are described in Example 10 from page 33, line 4 from the bottom to page 34, line 12. It is further noted that a harmful compound removing catalyst is not capable of decomposing a harmful compound such as SO_3 or SO_2F_2 unless the temperature is a high temperature within the range of 650-850°C.

The JP 8-238418 reference mentions the decomposition of only the CO produced from decomposing a flon compound. The '418 reference describes that CO is decomposed using a CO oxidation reaction catalyst of Pb-supported SnO arranged downstream of the flon decomposition process and the decomposition temperature therefor is at 50-80°C, and that the decomposition temperature for material of the Cu-Zn-A/203 family is 150-200°C.

As now claimed, the present invention decomposes a harmful component produced from the decomposing of a fluorine compound under the existence of a decomposition catalyst for such harmful component at a temperature of 650-850°C.

Under the temperatures as specified in the '418 reference, SO_2F_2 or similar substances are not decomposed.

Thus, the invention as now claimed is not one that a person skilled in the art could derive from the '418 reference.

The EP 885648 reference discloses a process for decomposing a fluorine compound such as CF_4, C_2F_6, SF_6 or NF_3 using one reaction vessel. In the process, these compounds undergo a reaction at a temperature of 200-800°C with a decomposing catalyst comprised of AL in combination with at least one of Zn, NiTi, Fe, Sn, Co, Zr, Ce, Si, and Pt to produce a compound such as hydrogen fluoride or carbon dioxide.

The '648 reference, however, neither describes nor suggests that the fluorine compounds are decomposed into a harmful component comprised of any one of SO_2F_2 or N_2O using a particular catalyst charged at the upstream portion of the reaction vessel, and that the harmful component is decomposed under a reaction at a temperature of 650-850°C using a specific catalyst for removing the harmful component wherein the catalyst is charged into the reaction vessel at a portion thereof downstream from where the decomposition catalyst is charged into the reaction vessel. Thus, what is intended by the '648 reference is to decompose a fluorine compound through only one stage of a decomposition catalyst. The '648 reference does not describe or suggest any process that performs decomposition

using two stages of decomposition catalyst, as the present invention specifies as now claimed.

It is noted that, through a detailed study on the decomposing reaction of fluoric compound such as SF_6 and NF_3, the inventors of the present invention have found that the decomposition of such fluoric compounds produces decomposition products only in specific combinations of SO_2F_2, N_2O, and CO. In other words, the present invention is an invention that cannot be conceived without this finding of the decomposition products.

In the present invention as now claimed, a single reactor vessel is charged with a catalyst for decomposing fluoric compound at an upstream portion thereof and with a catalyst for removing a harmful component produced in decomposition of said fluoric compound at a downstream portion thereof. Thereby, the fluoric compound is decomposed into a non-harmful substance, which is finally ready to be absorbed in water or alkaline aqueous solutions.

Therefore, the present invention as now claimed is completely different from the art defined in the '648 reference in composition and effects and is not an invention that a person skilled in the art could derive from the '648 reference.

The JP 61-3040 reference describes a gas sensor used in a gas circuit breaker filled with an insulating SF_6 gas, wherein the sensor detects fluctuation of properties of the atmospheric gas in the breaker, adapting the dependency of

electrical resistance of a polymeric compound on absorption of decomposition gas thereinto.

Therefore, the gas sensor in the '3040 reference would not be usable at high-temperatures of 650-850°C. Thus, the art described in the '3040 reference completely differs from the present invention which is now patentable thereover as now claimed.

Conclusion

It is further noted that there are no suggestions in any of the cited references of combining them in the manner done so by the Examiner. The claims as now amended therefore are patentable over these references, taken alone or in combination.

In view of the foregoing, Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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